

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: jamiel@primenet.com (Jerry A. Miel)
Subject: 51J4 bottom cover needed
Message-ID: <199601041513.IAA10881@usr3.primenet.com>

I need a bottom cover plate for a 51J4 (Civilian model) which I'm restoring. Except for this cover, the receiver is complete. If no one has a spare cover, maybe someone could make me a tracing of their so that I could make one.

73, Jerry, W6XL, jamiel@primenet.com

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: BC348@aol.com
Subject: 6JB6A ok for Drake?
Message-ID: <960103204130_83379506@mail02.mail.aol.com>

Just wanted to see if the 6JB6A were ok for use in the Drakes. I don't know what the significance is of the "A". Thanks in advance,

Bill, AC4LC

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: KB9VU@aol.com
Subject: Re: 6JB6A ok for Drake?
Message-ID: <960104034738_106071576@mail02.mail.aol.com>

Bill,

My drake T-4XC manual calls out 6JB6A's in the tube reference. Checking the tube substitution books I have here show the tubes to be rated the same. I have used both types in my radio. AAMF, I have A's in the rig now. I would not mix an A with a non A though just on general principles. Perhaps someone else on the list will have a more definitive answer on the specific differences between the two tubes.

Hope this helps.

Mike, KB9VU

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: lbbarley@southwind.net (Bruce Barley)
Subject: Re: 6JB6A ok for Drake?
Message-ID: <199601040923.DAA22350@onyx.southwind.net>

Hi, Bill.

Looking in my RCA '73 Tube Manual (RC-29) I find the published ratings to be identical for the 6JB6 and the 6JB6A. I do find a difference for the 12JB6A and the 17JB6A tubes as compared to the non-A numbers. That difference is that the filaments have a controlled 11 second warm-up time. But, the 11 second specification is NOT called out for the 6JB6A. Typically, this was for a series string of tubes running from 110/115/117 (somewhere's about) volts without a filament transformer. From what I see, I doubt that either you or your Drake will be able to tell any difference between using the 6JB6 and the 6JB6A.

Best wishes.

Bruce - KB0PZD
lbbarley@southwind.net

>Bill,
>
>My drake T-4XC manual calls out 6JB6A's in the tube reference. Checking the
>tube substitution books I have here show the tubes to be rated the same.
-====SNIP====-
>Perhaps someone else on the list will have a more definitive answer on the
specific
>differences between the two tubes.
>
>Hope this helps.
>
>Mike, KB9VU
>
>

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: EKnobloch@aol.com
Subject: Re: 75S-3B help needed
Message-ID: <960104135105_83746956@mail04.mail.aol.com>

> Steve KD2ED smiller@motown.ge.com reports that his 75S-3B S/meter does
not fully deflect when he places the receiver in standby.

One thing to try is to back off the RF gain and see if you can get the meter to fully deflect with minimum RF gain. If the receiver gain and S meter can be fully controlled with the RF gain pot, then the trouble is most likely a dirty contact on the standby/operate mode switch. If you get the same symptom (incomplete muting) with the RF gain at minimum, you most likely have a tube

with a partial grid to cathode short in the gain control path, either the 6CD6 RF amplifier tube, or the 2nd or 3rd IF amplifier tubes (both 6BA6). Either substitute those tubes (best method) or test them on a tube tester, with particular emphasis on the "shorts" test. The most likely bad tube is the 6CD6.

A less likely fault could be in the -65V bias supply.

73

Ed K4PF eknobloch@aol.com

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: "S. Miller" <smiller@motown.ge.com>
Subject: 75S3-B help needed
Message-ID: <199601041301.IAA07027@bear.MOTOWN.GE.COM>

My 75S3-B is exhibiting a strange symptom: When I turn the radio to standby the s-meter does not go all the way to the right, it reads any where from s9 to 70 over s9 but not all the way to the right. When I first turin it on it will go all the way over but then drop back in a few seconds to where I mentioned. (This is when I turn it on and just switch to standby.) I also think the radio is a little less sensitive but this is a subjective reaction as I have not measured the sensitivity other than checking the s-meter level with the calibrator. What causes the s-meter to move all the way over in the first place and where should I check to narrow the problem down?
Thanks
Steve Kd2Ed
smiller@motown.ge.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: spr@dolby.com
Subject: A strange request
Message-ID: <9600048207.AA820783860@smtp_gate.dolby.com>

A friend has a boatanchor...sort of. It's a military wire recorder, made by GE, model 20N1, serial number 1119. It has three tubes inside it, two of them loktals and one octal. A schematic or any other information would be most welcome...

Info to above email address or to scottpaul@aol.com.

many thanks,

/scott robinson

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: David Stinson <72227.1640@compuserve.com>
Subject: ARRRG! Make that ver. 2.01!
Message-ID: <960105031423_72227.1640_EHM129-1@CompuServe.COM>

>Re Dave Stinson's article on Command Sets: Dave, shouldn't the
>15K and 20K resistors be 10W, not 1W as you stated?
>Paul, K4MSG

ARRRG! I hate typos! Yes indeed, Paul.
Dropping 250 volts at 20 mils to provide oscillator B+ requires the resistor
to dissipate 5W, and the next highest standard value is 10 watts.
Am I ever gonna post an article without at least a dozen fumbles??
grumble grumble.....
Dave AB5S/7

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: cbmbest@ix.netcom.com (Ray Dennis)
Subject: BC 611 when I was a kid.
Message-ID: <199601050301.TAA11335@ix10.ix.netcom.com>

Hearing about the BC 611 brings back some pleasant memories. When I
was a teenager we came upon a number of BC 611's and they were all on
the same frequency in the 80 meter band. We had a ball with them. As
I remember, they were a little weak on modulation, so I think their
range could have been better with better modulation. It seems to me
that we were able to talk for a mile or so.

Ray W0DQ

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: "Frank Reid" <reid@indiana.edu>
Subject: RE: BC-611
Message-ID: <60508.reid@ucs.indiana.edu>

In message Thu, 04 Jan 96 15:28:45, <gc@fox.cen.com> writes:

>>>It is a BC-611 in extremely nice shape inside and out..

>>> and says to read TM-11-235 before using..It's the
>>> classic WW2 handi-talky that you see in all the old
>>>
> [...]

>> These radios do for between \$ 75 - 250 depending on how good a
>> condition
>
> About a month ago there was a BC-611 on the consignment shelves at
> the local ham store. Price was \$45 including manual. Sounds like this
> was another good deal that I passed up. But then I already have
> more projects than I know what to do with.
>
> Although I don't plan to go looking for one, I am a bit curious
> about this set and would like to know how it performs.
> Would any of the list members who have one be willing to tell
> us what the circuit is and what they can do with one (their best DX)?

I once played with a pair of BC-611's and got about 1/4 mile range which
might have been 2-4 times more were it not for all the SSB interference on
the 75m ham band. Not bad for a 2-foot antenna!

The BC-611 requires a 135-volt B battery which is about one inch square and
a foot long. You could probably improvise by connecting 9v batteries in
series.

I have read that some BC-611 operated in the 160m ham band. Has anyone
seen those?

--

Frank reid@indiana.edu W9MKV

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: KC5IJD@aol.com
Subject: RE: BC-611
Message-ID: <960104184515_83904230@emout06.mail.aol.com>

>The BC-611 requires a 135-volt B battery which is about one inch square and
>a foot long. You could probably improvise by connecting 9v batteries in
>series.

Robert Downs also has the original battery available for \$ 45 or so. They
are from a 1991 or 2 run.

Joseph W Pinner
Lafayette, LA
KC5IJD
EMail: kc5ijd@aol.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: Sandy Blaize <70401.134@compuserve.com>
Subject: RE: BC-611
Message-ID: <960105030032_70401.134_IHD52-2@CompuServe.COM>

Jeese! \$45 for the old Burgess XX-69!!! They were 103 volts. I used an external battery pack on my BC-611! (In the 50's!) It ran well with 90v. larger batteries carried in a canvas bag that originally housed a TG-5 field telegraph set. Only conversion I made was substitution of a 3A4 pentode for the PA tube (with minor rewiring) This boosted the output. Mine were on 3825 Khz. I could consistantly get 1/2-3/4 mile out of them working each other (During the day!) and 2-3 miles to a "fixed" station. I think I was the only 75 meter "bicycle" mobile in New Orleans! A few years later I ran a BC-1335 transceiver "mobile" on my Cushman motorscooter. Had a 1/4 wave whip mounted on the scooter! This was before the days of solid state stuff and CB radios. Before they opened up 75 and 20 meters to "General" or "Class B" amateurs, most of us who operated "phone were on 10 meter AM. My first "Commercial" 10 meter rig was a Lysco mobile rig. Three 6AQ5's! A 7 Mhz Oscillator/doubler, the final amplifier/doubler, and a single tube Heising modulator driven directly with a carbon microphone. It must have delivered all of 10 watts and oodles of TVI! I used a vertical dipole and worked a zillion KZ5's and W6's with it. They came thru like clockwork nearly every day at the same time.
73,
Sandy W5TVW

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: gc@fox.cen.com (Gary Chatters)
Subject: BC-611 (Was: Re: foraging in my Dad's attic again...)
Message-ID: <9601041941.AA08657@cen.com>

>
>>It is a BC-611 in extemely nice shape inside and out..
>>and says to read TM-11-235 before using..It's the
>>classic WW2 handi-talky that you see in all the old

[...]

>

>These radios do for between \$ 75 - 250 depending on how good a condition

About a month ago there was a BC-611 on the consignment shelves at the local ham store. Price was \$45 including manual. Sounds like this was another good deal that I passed up. But then I already have more projects than I know what to do with.

Although I don't plan to go looking for one, I am a bit curious about this set and would like to know how it performs. Would any of the list members who have one be willing to tell us what the circuit is and what they can do with one (their best DX)?

73,

Gary

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996

From: Allen Tucholski <allent@en.com>

Subject: Can't set IF freq to 2300 KC as specified, Gonset G-50

Message-ID: <199601041359.IAA12963@en.com>

I have a problem setting the IF freq on my Gonset G-50. When I inject a 2300 kc signal to pin 2 of V8 (6u8) no signal will pass thru. But if I change the signal generator to 2400kc I am then able to peak T4, and T5 to that freq. (2400kc) The Gonset receiver also has 455KC IF (T8, T7, T6) they all peak up fine to 455KC.

I followed the procedure with no luck. I did however peak the IF's of the radio with the 2400kc signal.
and it seems to work fine.

I wonder why I cant get a 2300kc signal thru? Tried peaking the slugs with no luck.

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996

From: pbock@melpar.esys.com (Paul H. Bock)
Subject: Re: Clegg Venus alignment
Message-ID: <9601042055.AA25752@syseng1.se.melpar.esys.com>

>Clegg Venus

> It is now appears to be functioning pretty much normally except for low
>transmitter power out - about 1/3 typical (10 Watts PEP). Probably a good
>alignment will fix that - I've checked all the tubes and installed a new 6883
>final.

Bob,

If memory serves, there is one step which is fairly critical, and involves adjusting the coupling somewhere in the stages before the final. It's been a *VERY* long time since I did it, but I seem to recall that it's one of those "squeeze the coil turns" type of things. I also remember (from the '70s, last time I saw a Venus) it's worthwhile to check the crystal oscillator with a freq counter, too. But it holds alignment well, and when properly set up is as good a 6-meter BA as there ever was, real sweet to use.

And don't ya just love that Eddystone dial! ;-)

73,

Paul, K4MSG

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: robert fowle <hammarlund@voyager.net>
Subject: comet pro speaker
Message-ID: <199601041912.0AA20442@vixa.voyager.net>

am posting this here, for the information of the group.

> I would like to find the matching
>speaker for the Comet Pro, though, so if you come across the model
>number in your research, it would be helpful. Or even a description!

Andy;

looking thru ads from jan 33 - oct. 33 there is never any mention of a matching speaker for any of the comet pro's.
however, on the back of the comet pro 4th edition manual xtal-avc model,

they show a picture of the speaker. looks like a square box, w/ squared corners, & mesh screen.
it says: Loud speakers, All "pro" models can be used with magnetic or self-excited dynamic speakers with an input impedance of approx. 4,000 ohms. the special "pro" speaker illustrated, is a permanent dynamic type, mounted in a solid birch cabinet, black crystal finish to match the reciever.
no model number for this speaker is given.

hope this info is of use.
Robert Fowle
the HAMMARLUND historian
Ph. 517-789-6721
E-mail: Hammarlund@vixa.voyager.net

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: David Stinson <72227.1640@compuserve.com>
Subject: COMMAND SET TRANSMITTER TIPS ver 2.0
Message-ID: <960104040702_72227.1640_EHM122-1@CompuServe.COM>

AN/ARC-5 / SCR-274-N Command Set Transmitter Tips.
(Current 1-3-96. Supercedes older versions which
should be burned so I won't get blamed for them.)

I posted an article about this a few months ago, but I've learned alot since then and have included it here. I'm working on a file for the BA archives. Like the ER article I've been trying to complete for the BC-375, I keep finding new stuff to include! Anyway, since there is a small resurgence in Command Set interest, and since I owe more info to some folks, here's my 2 1/2 cents worth.

Transmitter Types.

The common HF Command Set transmitter types come in four flavors. The Navy ATA-series units, designated "CBY-xxxx," were finished in black wrinkle and are electrically identical to the later Army units. The Army SCR-274-N units are designated "BC-xxx" and come in either black wrinkle (early) or bare aluminum (late). The Navy AN/ARC-5 units, designated "T-15" to "T-22" are all black wrinkle and include a few design refinements. The ARC-5 series uses a different rear connector and differing pinouts. The procedure for reviving these old vets is the same throughout. The AN/ARC-5 T-23 VHF transmitter fits the same rack as the HF rigs, but differs in important ways not covered here.

Rear Chassis Pin-outs.

Tack-soldering to the rear plug works but be mindful of the safety hazard in doing this. I've homebrewed plugs using pins from junker receivers and that worked OK. I don't have a good solution and will leave this to the many minds brighter than mine. Count the pins from the outside with the rig upright, starting from the top right and going clockwise, counting the center pin as #7.

Navy ARC-5 (T-15 through T-22)

- 1 N.C.
- 2 Osc. B+
- 3 Selector relay (here used for keying)
- 4 Ground
- 5 Filaments
- 6 PA Screens
- 7 PA Plate B+

Army SCR-274-N (BC-696, 457-459)

and Navy ATA (CBY-xxxxx)

- 1 Ground
- 2 PA grid drive test point
- 3 Osc. B+
- 4 PA Screens
- 5 Selector relay (here used for keying)
- 6 Filaments
- 7 PA Plate B+

Operating Voltages.

Filaments and relays need 24VDC at about 2 amps. I don't run +28 VDC because it's better than 10% high on the tube filaments. B+ voltages are not critical. Oscillator B+ is designed for about +200 VDC at 20 mils. Don't run over +250 VDC as this will cause component heating and drift. Regulated is better but not mandatory. My units run without regulated osc. B+ and drift very little after warm-up. PA screens were designed for about 250 VDC and the PA Plate circuit for 550 VDC at 150 mils. I wouldn't push past 600 VDC Hi B+.

Practical Supplies.

You can provide all the needed B+ voltages from a resistive divider chain on you Hi B+, and this is how the original design worked. Here's a simple divider you can draw out. Mark a point on your paper as "A". Connect Hi B+ and pin 7 to point A. Connect one side of a 20K 1W resistor to point A and the other side to pin 4 or 6, your PA screen. Connect one side of a 15K 1W resistor to point A and the other to a point we'll call "B." Connect the Osc. B+ pin 2 or 3 to point B. Connect a 100K 1W resistor from point B to ground. You may need to experiment with these values. Any value of Hi B+ from 300-600 volts with this divider will give you a working rig.

On keying the rig:

Unless you plan to build a complete racked system, some small changes will be needed. The original design used relays to key all the B+ supplies at once. I think Bob Keys's method is the least invasive, most elegant and 100% restorable. The TX selector relay is used to key the PA cathodes to ground and the Osc. B+. Since only the +24 VDC filament appears across the key, it's also safer than all those cathode keying schemes that require you to trash your honorable war veteran.

Resuscitation.

Remove the transmitter top and bottom covers. Locate the antenna selector relay with the big swing armature above the roller coil. Clip one power lead and tuck it out of the way. Carefully move the spring contact on the roller coil output over the antenna connector so that it makes contact all the time. Turn the transmitter over and locate the transmitter select relay. Carefully bend the small contact so that the Osc. B+ keys before the PA cathodes are grounded. While you're in there, replace the bathtub cap in the rear. More on this later.

You'll probably want to clean the roller coil turns.

DON'T sandpaper, file or wirebrush them!! I've cleaned them with a little Cramolyn or even just rubbed them good with a soft gum eraser. Remember that ceramic is easy to stain! Even with clean turns, expect a few intermittants as you tune. Once it's right, you won't change it much.

Lubricate the roller coil bearing and thumbwheel joints using a good household oil. Don't put oil on the ceramic-mounted end.

A drop of liquid Cramolyn works well there. Lubricate the moving adjustments throughout, except for the electrical contacts of course. Use liquid Cramolyn there. Don't over-oil as it will gather dust. Put the covers back on and you're all done.

Antennas.

I recommend using a resonant, 50-ohm coax-fed antenna.

Yes, it was designed for a short, wire skyhook. That will work but you're asking for RF burns, tedious tuning and other headaches.

Put a 50 pF, 2KV or better cap in series with the antenna output post and connect that to the coax center. The coax ground can be connected to one of the top screws. Connect a short ground bond between the transmitter and any outboard gear, especially an antenna tuner or the BC-442 antenna switch.

Tune-up.

Set the antenna coupling control to maximum and the roller to 0.

Key the rig and monitor the plate current. Plate current should be somewhere around 40-50 mils. If the plate needs "dipping" (and it shouldn't), you do it with the center variable under the chassis through the holes on the side. Leave the bottom cover on and screwed down or your tuning will be off. *DON'T* mess with the tuning slugs in the PA stage or the oscillator! This will foul the tracking that keeps the finals tuned throughout the band.

Watch the wattmeter and crank the roller coil for max out. Intermits in the roller coil will cause lower dips in plate current. You'll get from 25-40 watts out at about 100-150 mils of plate current. That's all there is to it. Tuning the rig this way will minimize chirp, by the way.

An important note about chirp:

In old WWII MO-PA rigs, a slight chirp was expected and accepted. You can't expect 90s keying from a 30s rig. However, I use the rigs even on 40 meters with very little chirp. The key is in properly tuning the rig, and having good .05 bypasses. I have a BC-459 40 meter rig on the air tuned this way and it has no noticeable chirp.

Concerning that 3x.05 uF bathtub cap:

On the rear chassis wall you will find a little bathtub with three .05 ufd 300 VDC capacitors to ground. With apologies to Boatanchor Bob, I always replace this cap. I have rebuilt many command transmitters and have never had one in which the bathtub survived very long, if it wasn't shot in the first place. Leakage in this cap is the #1 reason for drift, chirp and roasted resistors in these units. It changes the load on the oscillator, kills drive and fouls the PA bias. You need to keep the original wiring in place for both drift and calibration's sake. I usually cut out the mica, remove the old rotten gloop inside and put three nice little .047 mylars in there. You may have a simpler solution.

Good luck and hope to see you on the air.

73 DE Dave Stinson AB5S/7
Lost Wages, Nevada
72227.1640@compuserve.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: Witmerjr@aol.com
Subject: Contact Cleaner Recommendation? / Lithium Grease Source?
Message-ID: <960104153330_31810235@emout06.mail.aol.com>

Hello Everyone,

Thanks for all the suggestions on the HQ-180 and the SB-100, - along with comments on the Clegg BAs.

Clegg Venus

To date I've focused my time on the Clegg Venus and it has taken most of my time just to reverse the "Improvements" the last owner made - including, of all things, wiring the cathode current meter backwards! I do have what I believe to be the latest schematic - which helped with this older S/N radio. (The early models did not have the jumpers & phono jacks installed on the back panel for use with the Clegg SS Booster. I have a SS Booster and the instructions to install the mods but that is further down the priority list.)

It is now appears to be functioning pretty much normally except for low transmitter power out - about 1/3 typical (10 Watts PEP). Probably a good alignment will fix that - I've checked all the tubes and installed a new 6883 final.

HQ-180/SB-100

Next on my list is the SB100 & HQ-180. Maybe I missed it in the BA FAQ but what is the generally recommended treatment for dirty switch/relay/pot contacts? I've had limited success with WD-40. Also, what is best source for the white lithium grease which was recommended often for the HQ-180 variable cap problem?

Thanks again for the help,

Bob Witmer, W3RW

witmerjr@aol.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996

From: steve@hi.com (Steve Byan)

Subject: Re: Contact Cleaner Recommendation? / Lithium Grease Source?

Message-ID: <v02130514ad11ddcd60f8@[140.243.30.128]>

>what is the generally recommended treatment for dirty switch/relay/pot
>contacts?

DeOxit from Caig Labs.

AES carries the spray-can version. The other formulations including the full-strength stuff is available from MCM in Columbus, Ohio, among other places. MCM has a minimum order, however, as does Caig Labs themselves (I think MCM is \$20 and Ciag direct is \$50).

Regards,
-Steve

Steve Byan	internet: steve@hi.com
Hitachi Computer Products (America), Inc.	
1601 Trapelo Road	phone: (617) 890-0444
Waltham, MA 02154	FAX: (617) 890-4998

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: tony@bright.net
Subject: Crystals FS/Trade
Message-ID: <199601050321.WAA19430@brutus.bright.net>

Greetings!

I found a bunch of crystals while digging through one of my junk boxes tonight. I believe most are "pulls" from BA military gear, but have no idea from whence they came. They are listed below by type of holder and frequency (in kilocycles):

FT-243:

8400 5000 4300 1185 8386 4600 4094 5744.444 7057.4 8106.6

CR1A/AR: (some of these have USAF/Signal Corps markings)

7410 6450 7380 7300 8089 7010 7390 8538.33 8330.77

CR-18/U:

3282 7345 3355 9150 3600 3775

Also a bunch around 11560, which I think were fundamental crystals for UHF channels...some have UHF freqs. marked (i.e. 432, 427)

CR-23/U:

50.5 34.7 32.7 27.7

CR-54/U:

54.75 54.00

I can't use these rocks myself, so will sell them or (preferably) swap for BA gear, especially receivers and related do-dads (a Drake 2-BQ would be really nice!). I would like to sell all of these as a lot, but will split them up if a single buyer is not found.

Sorry for the bandwidth. I hope someone can put these to use.

73 de N8SNC, Tony

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: "Dick Dillman" <ddillman@igc.apc.org>
Subject: CV-1377 = ?
Message-ID: <199601042010.MAA24799@igc3.igc.apc.org>

Might someone be able to tell me if there's a US equivalent for the CV-1377 rectifier tube in my RACAL RA-17L?

Dick Dillman
WPE2VT N6VS ex-WA2BJK
<ddillman@igc.apc.org>
Collector of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: pbock@melpar.esys.com (Paul H. Bock)
Subject: Dave, check the resistor wattage.....
Message-ID: <9601041628.AA19746@syseng1.se.melpar.esys.com>

Re Dave Stinson's article on Command Sets: Dave, shouldn't the 15K and 20K resistors be 10W, not 1W as you stated?

Paul, K4MSG

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: dmccrarr@a553ca.orn.usace.army.mil (Dalton McCrary)
Subject: DX-100 Knobs

Message-ID: <199601042053.AA16551@a553ca.orn.usace.army.mil>

Is there anyone who has a set of knobs for a DX-100 in the supply box? Someone replaced the ones on a 100 I have with all varieties. Could really use the two sets of double knobs. These were replaced with knobs from a car radio. Ideas for replacement knobs, not necessarily exact, but not from a car?

Thanks, Dalton
N4OYS

dmccrar@a553ca.orn.usace.army.mil

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: stever@cybercomm.net (Stephan Rashkin)
Subject: foraging in my Dad's attic again..
Message-ID: <199601040427.XAA29909@raven.cybercomm.net>

Well spent another hour in my Dad's attic tonight and came away with another goodie I remember playing Army with when I was a kid..Luckily I was gentle with things..If anyone has any info on it as far as how common and approx value I would be interested..
It is a BC-611 in extremely nice shape inside and out..
and says to read TM-11-235 before using..It's the classic WW2 handi-talky that you see in all the old movies...everything is intact including the antenna and it's cone type cover..It is marked on the side at the bottom in a little label holder 3885kcs and the xtal is still in there..luckily the batteries are not..the rubber boot over the transmit switch is still nice and flexible..

I also found the range filter I used to use as a novice on my BC454/455's..It is a FL8B passive type filter in a metal box about the same footprint as a 3 1/2 inch diskette with a 3 position switch which says range/voice/both..it is by Automatic Winding Co. order #4073-wf-43..anyone know input/output impedances and what the bandwidth was supposed to be? It seemed to work better on my old ARC 5's but that was 35 years ago and I don't remember what I forgot? Well I should be receiving my "brand new in the box" BC454 from Chris Seig next few days and between that and the FL8B and my original hambrew 20/15/10 meter 2 tube converter from the 60's plus my Adventurer, Kenwood might as well start restructuring.

73,

Steve, WA2NHZ

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: KC5IJD@aol.com
Subject: Re: foraging in my Dad's attic again..
Message-ID: <960104110440_83678531@mail04.mail.aol.com>

>It is a BC-611 in extremely nice shape inside and out..
>and says to read TM-11-235 before using..It's the
>classic WW2 handi-talky that you see in all the old
>movies...

Robert Downs can really supply info on this set (as well as parts, etc.)
but I will share my knowledge as well (I have three of them - two -B
models and one -F model).

These radios do for between \$ 75 - 250 depending on how good a condition
it is in, what model it is, and how much the person wants the set. They
have become very sought after the last year or so. I see very few
advertised now. Andy Howard has been looking for one for some time. Don't
think he has found one yet.

73

Joseph W Pinner
Lafayette, LA
KC5IJD
EMail: kc5ijd@aol.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: "Dick Dillman" <ddillman@igc.apc.org>
Subject: Re: foraging in my Dad's attic again..
Message-ID: <199601041932.LAA17558@igc3.igc.apc.org>

> Robert Downs can really supply info on this set (as well as parts, etc.)
> but I will share my knowledge as well (I have three of them - two -B
> models and one -F model).

I have a BC-611-C on 3720Kc/s and a 'F on 5995Kc/s. They're in good,
operational shape *and* I have the A and B batteries (not in the sets
at the moment, of course).

There's been talk in the past of a BA frequency for use at swapmeets, etc. The last suggestion I remember involved PRC-6s. That would be good but clearly, if we want to demonstrate what totally cool dudes we really are, BC-611s are the thing. Anybody in the San Francisco area up for a QSO?

Dick Dillman
WPE2VT N6VS ex-WA2BJK
<ddillman@igc.apc.org>
Collector of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: Engbert Oord <engbert.oord@jet.uk>
Subject: Hammarlund HQ-170A
Message-ID: <9601041207.AA27876@jet.uk>

Sometime ago I acquired a Hammarlund HQ-170A. The previous owner had built in a speaker attached to the lid. I want to get rid of this modification and use the Hammarlund S-200 speaker instead. Is there somebody who has got one of these speakers and is willing to sell it (UK resident if at all possible). The receiver has not installed the optional 24 hour Clock Timer, same request as before.
The manual mentions the possible use of a VHF converter with a tunable I.F frequency of 50 MHz to 54 MHz. Does anybody know whether Hammarlund ever produced one themselves and how to get hold of one.

Finding out about the boatanchors group was a godsend.

Engbert oord G7THB

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: "Dick Dillman" <ddillman@igc.apc.org>
Subject: Heath IM-18 VTVM FS
Message-ID: <73358.ddillman@igc.apc.org>

Heath VTVM model IM-18, complete, original and in very good physical shape. Blue tag still on the back. Slight scuffing of paint on side of case.

Appears to be operational. Meter illumination and pilot lights light, meter moves as it warms up. But no probe available for full test.

Would anyone be interested in this item for something in the

neighborhood of \$35 plus shipping?

Dick Dillman
WPE2VT N6VS ex-WA2BJK
<ddillman@igc.apc.org>
Collector of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: pmills@cyberhouse.com (Phil Mills)
Subject: Re: House Cleaning Part 3
Message-ID: <199601040112.TAA04960@ns.cyberhouse.com>

This is mind boggling....can you think of what this man must be KEEPING!

>R-649 receiver, Hallicrafters
>Collins 651S-1A receivers (have 2)
>WRR-3B LF/VLF receivers (have 2),
>AN/FRR-59/WRR-2 receiver, a real ball buster, still in Seattle,
>completely unchecked, \$125 and you pick it up near Boeing Field.
>
Phil Mills, AB5TH
pmills@cyberhouse.com
713-482-2763

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: Jacqueline Herman <jherman@sierra.net>
Subject: Re: House Cleaning Part 3
Message-ID: <Pine.SUN.3.91.960103192834.27547B-100000@diamond>

On Wed, 3 Jan 1996, Terry O'Laughlin, RM:7135, #:6-6667 wrote:
> Collins 651S-1A receivers (have 2), 250kHz-30mHz, synthesized, LED
> readouts, loaded with mechanical filters (16/6/3/2.7U/2.7L/1.1/0.3/
> 0.1 kHz, but I'll have to double-check), remote controllable, battery
> backup, squelch, one receiver works great except needs a new
> volume/squelch control and the detents are loose on the 1mHz and
> 100kHz rotary switches (I use this one regularly), the other receiver

These receivers were standard issue at all US Coast Guard radio stations back in the mid 70s. At NMO we had at least 25 of 'em monitoring all the MF and HF maritime and aircraft calling and distress frequencies (and 20M, too =:0 [heehee]).

Jeff NH6IL (ex CW op at NMO)

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: MIKE SANDERS <ks0f@basic.net>
Subject: Re: House Cleaning Part 3
Message-ID: <199601040626.AAA23617@basic.net>

>These receivers were standard issue at all US Coast Guard radio stations
>back in the mid 70s. At NMO we had at least 25 of 'em monitoring all the
>MF and HF maritime and aircraft calling and distress frequencies (and
>20M, too =:0 [heehee]).

>

>Jeff NH6IL (ex CW op at NMO)

>

>When I got to NML in the early 60's they had recently pulled the HR060s
and replaced them with 51J4s. We used single channel crystal controlled
Collins receivers remoted on phone lines from a seperate receiver site.
These covered 500kcs CW and 2182kcs AM along with other working freqs.
We had 8 of them and 3 local J4s. In the late 60s we tried out a couple
of HQ180s as local receivers but hung onto the J4s. All transmitters were
also phone line remoted from another remote site. We used telephone rotary
dials to select frequencies on several transmitters. Our only local tx was
an AN/FRT 23B LMO type rig. It spent a lot of time on 40 meters after
midnight.....73 de KS0F

ZUT

P.S. Sometime late 66 or so we started range testing a new fangled FM
VHF type gear. Things went downhill from there.

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: KC5IJD@aol.com
Subject: Re: House Cleaning Part 3
Message-ID: <960104103622_31566187@mail04.mail.aol.com>

>In the late 60s we tried out a couple
> of HQ180s as local receivers but hung onto the J4s.

I have a HQ-180AX which came from the New Orleans Coast Guard Station. It
was modified for rack mounting. Only one like it that I have ever seen or
heard.

Were the HQ-180s you used modified for rack mounting as well?

Joseph W Pinner
Lafayette, LA
KC5IJD
EMail: kc5ijd@aol.com

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: JIM GARLAND <GARLAND@MPS.OHIO-STATE.EDU>
Subject: Info Needed- CE 600L Linear
Message-ID: <01HZL9WL85N68WWF5C@MPS.OHIO-STATE.EDU>

I'm restoring a Central Electronics 600L linear, which may be the most sophisticated amplifier of its era (160-10meters, no tune, sealed broadband coupling modules for each band. The back of the chassis warns not to try and figure out how the couplers work, else the warranty will be voided. Presumably I don't have to worry about that now, unless the warranty was for 40 years!)

The amplifier has a SN of 56014, which I'm assuming means it was the 14th one made in 1956. I have several pages of documentation called "interim instructions," which has a circuit diagram and some operating instructions. The documentation notes that the full manual will be shortly available. Does anyone know whether a complete manual was ever printed for the 600L? I'd love to get a copy. Also, does anyone have any suggestions on restoring the cabinet paint? It's has a velvet-like texture, rather similar to that on the Drake TR7 cabinet. Tnx and 73,
Jim W8ZR

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: "Cal J. Eustaquio" <ceustaqu@violin.aix.calpoly.edu>
Subject: Re: Lookking for Gonset II
Message-ID: <Pine.A32.3.91.960104081729.51294A-100000@violin.aix.calpoly.edu>

John:
Had any luckk yet?

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: wb6zwc@ns.net
Subject: RE: Manuals
Message-ID: <199601042247.0AA05172@eagle.ns.net>

>
>>
>>
>>Sorting through my books and came across "Vintage Manuals". Now, most of
>>you probably

>>know about this but for those that do not; try:

>>

>> The Manual Man
>> Pete Markavage
>> 27 Walling St.
>> Sayreville, NJ.
>> 08872-1818
>> 908-238-8964
>>

>>I found what I needed and I noticed there is a manual for the R-390.

>>

>>

>>Also have used this source: Manuals for Amateur, Audio and test equipment.
P.O. box 110
East Rockaway, NY
11518
516-887-0057

Richard

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996

From: pmills@cyberhouse.com (Phil Mills)

Subject: Re: Measuring Filament Voltage

Message-ID: <199601040058.SAA04928@ns.cyberhouse.com>

Hank,

Thanks for your very good and helpful explanation....it is all very interesting, but if I understand it correctly, it means that I can spend \$1,000 on test equipment that I have to use absolutely correctly to ensure that I don't shorten the life of my \$200 final amp tube....(at BA prices...not AES!) Maybe there is something to be said for QRP (I didn't really mean that!)

thanks,
Phil

>AC measurements in general: These tend to be a pest because it is
>difficult to set up accurate sources for calibrating your
>instrumentation.

>For accurate AC measurements I'd suggest a Ballantine or HP RMS
>voltmeter that has been accurately calibrated recently. If you want
>real accuracy (1% type stuff), have your meter checked by a standards
>lab at the voltages where you want accuracy. It is possible to get

>fairly accurate (3%) calibration in your "ham shack" or "kitchen table
>cal lab," but it takes a good deal of skill to get this all the way to
>the meter.

>

Phil Mills, AB5TH
pmills@cyberhouse.com
713-482-2763

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: EKnobloch@aol.com
Subject: Re: Measuring Filament Voltage
Message-ID: <960104135233_83747563@mail06.mail.aol.com>

> Hank van Cleef vancleef@bga.com gave a very complete posting on the
difficulties of measuring RMS heater or filament voltage.

One way out of this difficulty for those of us without a calibration lab, may be to use a National Semiconductor LH0091 "True RMS to DC Converter", a 16 pin dip chip which is advertised as having typically 0.5% error, 1% max error at low frequencies (using no trimmers). It does require a dual +/- 15V supply, and an external 4uF smoothing capacitor. If you include a couple of trimmer capacitors, they advertise typical error of 0.05%. (trimming is done using a DC supply as input, not hard-to-get accurate AC). The +/- 15V supply required is a standard regulated power supply, not a super accurate type. You can use up to +/- 20V as the power supply.

The idea is, if you put 6.0V RMS a.c. in, you get + 6.0VDC out, which you can then meter with a garden variety Digital Multimeter. If you put in either plus or minus 6VDC, you get +6VDC output (since 6VDC of either polarity is 6V RMS).

I don't know how much this chip costs, it's not listed in the '94 Digi-Key catalog. The data sheets are in the "National Special Purposes Linear Devices" data book.

Of course, using this chip, you still don't have NIST traceability, but at least you're making somewhat meaningful measurements. Plus you are making "high tech" serve the noble purpose of keeping good boat anchor equipment running.

73

Ed K4PF eknobloch@aol.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: bill@texan.frco.com (William Hawkins)
Subject: Re: Measuring Filament Voltage
Message-ID: <9601042004.AA03465@texan.frco.com>

Ed suggests using an LH0091 RMS to DC converter. Great idea! Unfortunately, National has discontinued it, as of the 1993 handbook. Nor do I see anything in the other meager resources available here at work. In fact, our last analog designer transferred to another division. But it seems to me that any opamp can be used to make a precision rectifier, or maybe a function generator can be used to build a root mean square root extractor.

We probably ought to take this to vintage solid state and come back when we've got the answer, unless there's a chorus of "No, no, we're interested."

Bill Hawkins bill@bvc.frco.com 612 895-2085 Minneapolis, MN USA

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: "Frank Reid" <reid@indiana.edu>
Subject: Military field phones
Message-ID: <39283.reid@ucs.indiana.edu>

Dear friends,

I'm looking for sources of complete units and parts for U.S. Army field-telephones, models EE-8, TA-43, TA-312, TA-1.

Especially need old-style large-diameter Western Electric carbon mikes for EE-8, and "sound-powered" transducers for TA-1.

These are to be used in cave rescue. I already know about Fair (as in mediocre :-) Radio Sales of Lima, OH.

Have Soviet field-phones appeared on the surplus market? What are they like?

Also interested in Fullerphone, an ingenious British device of World War I which could do simultaneous voice and telegraphy.

--

Frank Reid reid@indiana.edu W9MKV NSS 9086

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: "Dick Dillman" <ddillman@igc.apc.org>

Subject: Re: Military field phones

Message-ID: <199601041932.LAA17566@igc3.igc.apc.org>

> I'm looking for sources of complete units and parts for U.S. Army
> field-telephones, models EE-8, TA-43, TA-312, TA-1.
>
> Especially need old-style large-diameter Western Electric carbon mikes for
> EE-8, and "sound-powered" transducers for TA-1.

Have you tried Michael Murphy at Murphy's Surplus Warehouse (401 N. Johnson Ave., El Cajon, CA 92020, Phone 619-444-7717, Fax 619-444-6750)? He had a pretty good supply of field phones the last time I was rummaging around there, although the ones I saw were the more modern types.

By the way, there is a back and front area at Murphy's. You want the back area and to speak to Michael himself, if possible.

> Have Soviet field-phones appeared on the surplus market? What are they
> like?

Murphy's had a pair of these, I'm not sure what vintage. They looked somewhat like the German WWII type units, in phenolic (or similar material) cases.

Dick Dillman
WPE2VT N6VS ex-WA2BJK
<ddillman@igc.apc.org>
Collector of Heavy Metal:
Harleys, Willys and Radios Over 100lbs.

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: KC5IJD@aol.com
Subject: Re: military radio
Message-ID: <960104090020_106206159@emout06.mail.aol.com>

>I recently have acquired a military radio
SIGNAL CORPS U.S. ARMY, RADIO RECEIVER BC-603-DM, BELMONT RADIO CORP.
>It, I think, came out of a tank.

The BC-603 is a WWII VHF FM receiver (companion transmitter is the BC-604). It indeed was used in tanks and other large vehicles. Forget the exact frequency range (something like 28 - 45 Mc). If it has a AC plug, it has been converted by the addition of a AC supply in place of the dynamotor (a common thing).

Back in the late 60s, this was one of the first mil surplus radios I had. Many of these were modified by hams for AM and coverage changed to the 6 meter band. I used mine to listen to FM signals on the 30 - 50 Mc of fire, police, etc.

73

Joseph W Pinner
Lafayette, LA
KC5IJD
EMail: kc5ijd@aol.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: doonan@cordmc.dnet.etn.com (DENNIS DOONAN X6916 (KG9DO))
Subject: O'Scope how-to book
Message-ID: <9601041744.AA28251@etn.com>

Some time ago, one of the group asked about a book to help learn to use a scope. Some of came up with old titles.

I just read a review of a new book tht may be of some use. "Hnads-On Guide to Oscilloscopes" from McGraw-Hill Books, Europe, ISBN: 0-07-707818-7, \$24.50 (England +44 1628 23432).

Its a 224 page paperback published in 1994. It claims to how to work the machine and explain the circuits behind the functions.

It is sure to be dealing with things a lot newer than BA style Tek gear, but it may be of interest.

I have not seen the book yet, but I have asked the Corporate library to get a copy for us.

73 de Dennis, KG9DO doonan@cordmc.dnet.etn.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: mack@MAILS.IMED.COM
Subject: R390 type "C" connectors
Message-ID: <9600048208.AA820802996@mails.imed.com>

There was a thread over the holidays regarding the input connectors on the R390. If the "C" connector is REALLY a threaded "N" connector (I've never seen a C in real life), you can use a trick I learned from Kent Brittain. If you take a BNC female and file off the bayonet bumps, it will fit directly onto an "N" (and presumably a "C"). It won't be mechanically sound of course, but it will do in a pinch. I believe you can do the same with a male BNC by cutting off the shell and shoving it into a female "N".

Ray Mack
WD5IFS
mack@mails.imed.com

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: Henry van Cleef <vancleef@bga.com>
Subject: Re: RF gain pot ?
Message-ID: <199601040406.WAA27322@zoom.bga.com>

As Allan Fritsche said

>
>
>
> I have several boats with obvious rf gain pots having been replaced
> at some time in the past, a couple seem to jump out of linearity when wide
> open. Question, should replacements be linear or audio taper or does it
> matter. In the manuals I have for them it gives a house part number replacement
> but doesn't state. I suspect linear. Someone please reply with the right way
> to go.

>
The type of RF gain control used in most communications sets is a
resistance in the cathode circuits of remote cutoff tubes in the front
end. The original pots were "audio" (logarithmic) taper, but reversed
from normal. That is, turning the pot from maximum clockwise adds
resistance slowly, and speeds up as you approach counterclockwise.

You can wire in a conventional log taper pot by wiring and operating it
backward. I.e., maximum gain is full counterclockwise. If the pot has
a switch on it to ground out the AVC line when it is off maximum, a
conventional pot with an on-off switch will work for this. On the
Hallicrafters sets where the switch is closed at maximum and open when
the pot is operated, to kill the S-meter, you can usually just wire
across the switch. Of course, the S-meter will continue to operate,
but give meaningless readings when you are off the maximum.

--

Hank van Cleef vancleef@bga.com vancleef@tmn.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: ornitz@eastman.com (Ornitz_Barry)
Subject: RE: RMS to DC Conversion and Measuring AC Voltages

Message-ID: <199601050058.AA17647@eastman.com>

In [VSS:373] Bill Hawkins asks about RMS to DC conversion. Since there has been a recent thread on the Boatanchor group about measuring filament voltage and moving vane AC meters, I will cross-post this message. Hank Van Cleef excellently covered much of the reasons for problems with AC measurements a day or so ago so I will mention this only briefly. [Who me? Be brief? HA!] I hope those diehard vacuum tube folks will put up with a little semiconductor discussion to see how technology has changed. Besides, I see nothing wrong with using the latest technology to preserve and often improve the performance of vintage electronic equipment.

Hank mentioned this before, but for those coming in to the middle of this discussion, let me repeat a little.

When measuring AC voltages, you really need to know a lot about the type of signal you are measuring. If the signal is a "pure" sinusoid (with NO harmonic distortion), the peak-to-peak voltage, the average voltage, the rectified voltage, and the root-mean-square (RMS) voltage are all related. A voltmeter can measure any of these properties and be calibrated to read out any other. As Hank said, different meters use these various measurements but if properly calibrated, all of these meters should agree on a pure sinusoidal AC signal.

When the signal to be measured has a little harmonic distortion, watch out! When the signal is very different from a pure sinusoid, you can throw your measurement out the window (unless you know the waveform properties in advance). With square waves, pulsed signals, AC signals that have non-symmetrical shapes (like with a little DC riding on top), sawtooth waves, exponential waves, voice waveforms, signals passed through non-linear devices (like saturable inductors), and ESPECIALLY random noise... you had better ask yourself what it is that really requires measurement, and WHY do you want to know.

Peak-to-peak voltage is useful to know if you worry about the voltage ratings on rectifiers or capacitors. It is fairly easy to measure with an oscilloscope if you do not need high accuracy (use a scope comparator plug-in if you want more accuracy). With the proper rectifier circuits, you can develop DC voltages related to the peak positive and negative swings of the input waveform. [Remember Bill's question about precision rectifiers?] The difference between these DC voltages is the P-P value.

The mean or average voltage of an AC signal is, of course, zero. If there is any DC superimposed, the mean is the DC voltage. The mean can be approximated by low-pass filtering the waveform.

The MAV, or mean absolute value (or mean absolute deviation in statistical terms) can be determined for an AC waveform. You typically full-wave rectify the signal and filter the output which is now a DC value. Once again, you need a precision rectifier. This measurement is simple but fairly useless for anything except square waves and square-edged pulsed signals. But for a pure sinusoid, though, it can be related back to something else more meaningful.

Most AC voltmeters utilize variations on either of the above two schemes. Moving vane AC panel meters are somewhat similar to the MAV measurement except eddy currents and such perform a mechanical analogy to rectification. Lots of old books go into how these really work.

[One of my personal "hats off" goes to the inventor of the modern (1920's?) watt-hour meters. These mechanical marvels do an excellent job of measuring energy consumption over an extreme range of power factors which is why most "spoof the power company's meter" devices are bunk. Also consider that there are NO active devices, either vacuum tube or semiconductor, in the common watt-hour meters.]

The really useful measurement of an AC signal is the root-mean-square (RMS) value. There are many statistical arguments why this is a good measurement to make. But the simplest is that the RMS value of a waveform will produce the same amount of heating in a resistive load as will a DC signal of the same value. This sounds great... run the signal through a resistor and see how hot it gets. Easy! But in practice this is a very difficult measurement to make. Some "true RMS" meters actually make this measurement, using feedback circuitry to balance a DC signal's heating power against the unknown AC voltage's heating power. If you have one of these relics, and it is still in calibration, you have either deep pockets or a museum piece.

Modern RMS meters go back to mathematical relationships to measure RMS. You take the input signal and square it (multiply it by itself). This produces a signal with AC and DC components. Low pass filter to remove the AC and then take the square root of the remaining DC signal. Once again the math is easy but getting accuracy is not.

The problem comes down to how the squaring and rooting are done. There is an issue of how close these functions can be approximated electronically and how much dynamic range is needed for the particular input waveform. [And for those digital nuts who say software can do the squares and the roots exactly, consider that you now have a whole new set of problems in doing the analog to digital conversion!]

The squaring can be done with a transconductance (Gilbert) multiplier, and the root taken with another multiplier in a high gain feedback loop. Alternately, the exponential nature of the current/voltage relationship

in semiconductor diodes can be used to perform the log/antilog calculation of RMS. The multiplier approach works better for certain applications while the log/antilog approach works better for others. For extremely wide bandwidth signals, entirely different approaches may be used.

For those folks like Bill Hawkins who really get into this stuff, I would suggest they consult some of the references by Analog Devices. They used to offer a free RMS-to-DC Conversion Application Guide and the issue is discussed extensively in their Nonlinear Circuits Handbook. This book is still available from them (less than \$10 the last time I saw a price) and is probably one of the BEST BUYS you can ever find for designing with nonlinear components. In fact, I believe a number of Analog Devices publications should be required reading for any EE or anyone serious about learning electronics.

The Nonlinear Circuits Handbook also discusses precision rectifiers where the nonlinear characteristics of diodes are minimized by placing them in the feedback path of an operational amplifier. [And remember the first operational amplifiers were vacuum tube devices!] Other useful areas are logarithm and exponential functions, automatic gain control and compression, etc. BUY THE BOOK. IT IS WORTH THE SMALL COST.

To tie some of this back into the realm of Boatanchors, the original discussion was on the accuracy of measuring filament voltages. The circuit discussed used a germanium point contact diode to rectify the signal and drive a DC meter. What this actually measures is up for debate, but experience shows that such a circuit CAN be calibrated if and ONLY if, the waveform is a pure sinusoid or a well-behaved, close approximation to one.

The big point I am trying to get across is that no simple AC measurement can EVER be meaningful unless you understand what the measurement is and what its limitations are. I hope Hank Van Cleef agrees with me when I say that you should NEVER blindly trust your meter for any AC measurement. The sad thing is that many modern DVM's advertise "true RMS" and give the limitations in fine print. The further away from a true sinusoid the input waveform is, the lower their accuracy.

Probably the worst waveform to have to measure is random noise. If you want to do an experiment, tune your radio between stations and turn the volume up. The hiss from the speaker is an approximation of white noise. Try measuring this AC voltage simultaneously with all the AC voltmeters you can find. Most people are amazed at the differences. Now turn the volume down and see how well the meters track each other. Finally, try reading the AC signal from the plate of the audio output tube (much higher impedance and voltage plus a DC component). Try this

experiment with your oldest Weston, your VTVM, your HP's, and all the different modern DVM's.

And now possibly offending both the VSS and Boatanchor groups, let me suggest that if you have vacuum tubes that are extremely rare or expensive, you should consider operating the filaments on regulated DC. Surplus linear and switching power supplies are cheap on the surplus market. Many can be adapted to get the needed voltages for tube filaments. With soft-start and over-current protection, they can do a lot to prolong those hollow-state babies!

Sorry for the length of this, friends. I get these occasional urges to teach (but I hate university environments). This is a bad thing when you tend to be long winded like me. Of course, I do shut up if food is around.

73, Barry WA4VZQ ornitz@eastman.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: gc@fox.cen.com (Gary Chatters)
Subject: RE: RMS to DC Conversion and Measuring AC Voltages
Message-ID: <9601050228.AA15858@cen.com>

Barry writes:

[...snip...]

>

>And now possibly offending both the VSS and Boatanchor groups, let me
>suggest that if you have vacuum tubes that are extremely rare or
>expensive, you should consider operating the filaments on regulated DC.
>Surplus linear and switching power supplies are cheap on the surplus
>market. Many can be adapted to get the needed voltages for tube
>filaments. With soft-start and over-current protection, they can do a
>lot to prolong those hollow-state babies!

>

It is hard to be offended by such an informative posting. This part of the posting does discuss a subject that I have been curious about and would like a little more information on. Since it concerns vacuum tubes, I'll only post to the BA list.

A lot of power supplies (Lambdas are very common) show up at hamfests and I often buy one. I have wondered what advantage there might be to running a filament string off a regulated DC supply.

- Most of these supplies are constant voltage. Would there be any improvement in stability with the voltage regulation?

Some radios have ballast tubes to regulate current. Would it be more appropriate to regulate current? Or limit it?

- Being able to set the voltage precisely would probably help with life extension for tubes, but what about start-up current. You mention over-current protection, but how closely does it have to be limited to benefit tube life time?

To restate the questions: What good can regulated filament power do and what kind of regulation do we need to do any good?

73,

Gary

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: "chris (c.j.) clotworthy" <clotwort@bnr.ca>
Subject: RU-19 Receiver
Message-ID: <"13788 Thu Jan 4 11:51:06 1996"@bnr.ca>

I recently acquired one of these - it's a 5-valve TRF aircraft receiver, marked USN, Department of Ships, with 9 plug-in coils covering from 400 kc/s to about 12 Mc/s - anyone got any info on what aircraft this was used in, or access to schematics or any other info.?

73 de GI7TEU
Chris Clotworthy

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: jcreid@CCGATE.HAC.COM
Subject: Schematic needed.
Message-ID: <9600048207.AA820772879@CCGATE.HAC.COM>

Hi Gang,

My mother-in-law gave me a beautiful wooden table radio from her late uncle's estate. The caps are all dried up(of course), but the electrolytics formed right up after applying a few of the techniques learned here. I'd really like to find a schematic for it. It's a Western Royal model#169. Sams has nothing and Rider lists a couple different models. It's a simple enough receiver: power transformer, octal tubes, etc. Someone has been in it, however, and I'm not exactly sure what's supposed to be there and what isn't. If you can help, drop me some e-mail. Thanks!

-Jim N6SVS
jcreid@ccgate.hac.com

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: MODSTEPH@ACS.EKU.EDU
Subject: Re: Schematic wanted
Message-ID: <01HZMDTYXQTU000NC2@ACS.EKU.EDU>

Soprry - I hit the "delete" key and lost your address just as I remembered I have a book of schematics of popular radios that covers about 20 years' worth.

Send me the make and model number, please, and I'll see if I can turn it up. Our system will be down for the next three or four days, though, so don't worry if you do not get an answer for a few days.

73, Al N5AIT
modsteph@acs.eku.edu

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: amman@airmail.net (Robert)
Subject: Sold Hallicrafters S-38
Message-ID: <199601040717.BAA12665@server.iadfw.net>

Thanks, but I have already made a deal that is pending.

73's
Robert KC5RYI

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: amman@airmail.net (Robert)
Subject: Trade Hallicrafters?
Message-ID: <199601040328.VAA16911@server.iadfw.net>

New Ham wants to trade Hallicrafters model S-38 receiver for a cw key or a dummy load(100w.) to tune up boatanchor.S-38 is in rough condition, it is missing the bottom and backing plate, also missing two knobs. The radio is otherwise complete with all tubes etc. I have had the radio for years and have never checked it out to see if it was working. If interested E mail me at (amman@airmail.net)

Thanks and 73's
Robert McCarthy KC5RYI

Dallas, TX.

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: "James P. Rybak" <jrybak@mesa5.Mesa.Colorado.EDU>
Subject: Tubes Needed
Message-ID: <Pine.3.89.9601041730.B26027-01000000@mesa5.mesa.colorado.edu>

I want to buy a couple of '00A (UX200A) tubes and a couple of '01A (UX201A) tubes along, perhaps, some UX199A and WD11 tubes. I will consider unused or good, used tubes depending on the price and availability.

Does anyone have any suggestions concerning sources for these tubes?

Thanks.

Jim Rybak W0KSD

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: n7oo@azgate.nj7p.ampr.org (Jack Taylor)
Subject: Re: UPS Christams story
Message-ID: <2808@NJ7P>

Regrdng missing tooobs from UPS, I'd file a claim, identifying the missing ones. I once sent an item that got damaged in shipping. The receiving party never complained and it was over a month before UPS contacted him, asking if he was missing parts ... Apparently they had saved the stuff that had fallen out of the carton and was waiting for a claim to be filed.

73 de Jack

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: Vlad Dvorkin <dvorkin@pcs.mot.com>
Subject: UPS Christmas story
Message-ID: <199601042157.QAA11987@iron65>

Hello BA,

One gentleman sent me a WWII German receiver (Torn E. b) from Florida through UPS. It took 19 days to arrive in Chicago.

The radio was damaged while being shipped. The shipping box was opened by somebody and sealed again, but three tubes out of four are gone! Any advice how to deal with UPS?

Does anybody have RV2P800 tubes for sale/trade? I have RV12P2000 tubes and others.

Regards,
Vlad
ex. UA3ACR

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: MEC <danmec@inet.uni-c.dk>
Subject: Re: UPS Christmas story
Message-ID: <Pine.3.89.9601042339.A7721-01000000@inet.uni-c.dk>

> One gentleman sent me a WWII German receiver (Torn E. b) from Florida
> through UPS. It took 19 days to arrive in Chicago.

I think I could have done it better from CPH. hi

> The radio was damaged while being shipped. The shipping box was opened
> by somebody and sealed again, but three tubes out of four are gone!
> Any advice how to deal with UPS?
>

> Does anybody have RV2P800 tubes for sale/trade? I have RV12P2000 tubes
> and others.

I have P800 tubes
73 Rag OZ8R0

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: Steve Ellington <n41q@iglou.com>
Subject: Re: Valiant I or II, whats the difference?
Message-ID: <Pine.SOL.3.91.960103212407.10898B-1000000@iglou2>

The Valiant 1 didn't know it was a Valiant 1 until the Valiant 2 hit the market. Same deal with the Ranger 1 and 2. The Valiant 2 has a gray finish. Also, a ssb adapter was designed to match the Valiant 2 and a coax input for it was installed on the back of the transmitter. I have used that coax input to feed my 5 watt Argonaut's output into. It made a nice amplifier! The rest of the changes were minor.

How many more BA's found out they were only second best after the MOD 2 came out? How about the Collins 75A receiver? It became a 75A-1 only

after the 75A2 came along!

Steve Ellington N4LQ@IGLOU.COM Louisville, Ky

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: jmlckwd@mindspring.com (Max Lockwood)
Subject: Re: Web Page pictures needed!
Message-ID: <199601040449.XAA05071@borg.mindspring.com>

> Photos looked very good
>. I encourage everyone out there with a camera to take some
>photos of their treasured BA's and send them along to John so we all can
>"share" each others collections!

For anyone who is considering making some photos for Jon's "boatscape" page,
I'd like to offer what little insight I have into the photography process.
To generate photos that will yield nice scans, correct lighting is **the** key.

It's inappropriate to clog BA with a discussion of photographic lighting and
I won't do it. However, if you want some hints and tips on how to create
the kind of soft lighting that yields high quality images, contact me
privately via mail and I'll share what I know.

Despite the return address on this message, your best bet to reach me is at
my normal email QTH, which is:

jml@spider.lloyd.com

73,

Jim - km6nk

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: steve.rohrer@swsbbs.com (Steve Rohrer)
Subject: WTB: AM-141 Tank Coils
Message-ID: <35054.300.uupcb@swsbbs.com>

I have recently acquired a AM-141 amplifier, part of AN/MRC-2, and need
tank coils for the same. These coils are similar to BC-610 tank coils,
only larger. They may bear the numbers 1684-1, 1685-1, 1686-1, 1687,
1688, or 1689.

Tnx - steve.rohrer@swsbbs.com - KA4RSZ

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: MEC <danmec@inet.uni-c.dk>
Subject: Re: WW-II RADAR: DOCUMENTS FOR SALE.....
Message-ID: <Pine.3.89.9601040921.A23778-0100000@inet.uni-c.dk>

I have a selection of British papers from late 1940's on radar

Also manual for US Artillery Radar SCR something.
Pse email me if interested.

73 rag oz8ro

PS I also have some German WW2 radar transmitting tubes and PPI-tubes

From boatanchors@theporch.com Thu Jan 4 21:58:28 1996
From: joecot@superlink.net (Joe Cotignola)
Subject: Zenith TransOceanic Tubes Needed
Message-ID: <199601042319.SAA15960@mars.superlink.net>

Just found a model G500 in nice condition in my attic. No tubes, though; can anybody help me with

two	1U4
one	1L6
one	1S5
one	3V4

I would like to purchase these tubes, if you can spare any of them
please send me e-mail. TNX 73 WR2B

From boatanchors@theporch.com Thu Jan 4 13:22:59 1996
From: ckaine@one.net (christopher kaine)
Subject: Zenith Wanted
Message-ID: <199601040332.WAA26996@mail.one.net>

Hello OM:

Just subscribed. This is a great group. I have a want, I am looking for a mint Zenith Transoceanic D7000Y. I know it has no 'valves', but I always wanted one.

Thanks for you help.

Chris Kaine
N8JDG
ckaine@one.net